

SEQUENCE LISTING

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Ye, Bin

<120> Sodium Channel Alpha Subunits

<130> 960296.98032

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<170> PatentIn Ver. 2.1

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<211> 6091

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (10)..(6054)

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atg agt gag aac ttc tcc cga ccc ctt ggc cca ccc tcc agc tcc tcc Met Ser Glu Asn Phe Ser Arg Pro Leu Gly Pro Pro Ser Ser Ser Ser 1955 1960 1965	5907
atc tcc tcc act tcc ttc cca ccc tcc tat gac agt gtc act aga gcc Ile Ser Ser Thr Ser Phe Pro Pro Ser Tyr Asp Ser Val Thr Arg Ala 1970 1975 1980	5955
acc agc gat aac ctc cag gtg cgg ggg tct gac tac agc cac agt gaa Thr Ser Asp Asn Leu Gln Val Arg Gly Ser Asp Tyr Ser His Ser Glu 1985 1990 1995	6003
gat ctc gcc gac ttc ccc cct tct ccg gac agg gac cgt gag tcc atc Asp Leu Ala Asp Phe Pro Pro Ser Pro Asp Arg Asp Arg Glu Ser Ile 2000 2005 2010	6051
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<212> PRT
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20 25 30

Ala Arg Gly Ser Thr Thr Leu Gln Glu Ser Arg Glu Gly Leu Pro Glu
35 40 45

Glu Glu Ala Pro Arg Pro Gln Leu Asp Leu Gln Ala Ser Lys Lys Leu
50 55 60

Pro Asp Leu Tyr Gly Asn Pro Pro Gln Glu Leu Ile Gly Glu Pro Leu
65 70 75 80

Glu Asp Leu Asp Pro Phe Tyr Ser Thr Gln Lys Thr Phe Ile Val Leu
85 90 95

Asn Lys Gly Lys Thr Ile Phe Arg Phe Ser Ala Thr Asn Ala Leu Tyr
100 105 110

Val Leu Ser Pro Phe His Pro Ile Arg Arg Ala Ala Val Lys Ile Leu
115 120 125

Val His Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn
130 135 140

Cys Val Phe Met Ala Gln His Asp Pro Pro Pro Trp Thr Lys Tyr Val
145 150 155 160

Glu Tyr Thr Phe Thr Ala Ile Tyr Thr Phe Glu Ser Leu Val Lys Ile
165 170 175

Leu Ala Arg Gly Phe Cys Leu His Ala Phe Thr Phe Leu Arg Asp Pro
180 185 190

Trp Asn Trp Leu Asp Phe Ser Val Ile Ile Met Ala Tyr Thr Thr Glu
195 200 205

Phe Val Asp Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu
210 215 220

Arg Ala Leu Lys Thr Ile Ser Val Ile Ser Gly Leu Lys Thr Ile Val
225 230 235 240

Gly Ala Leu Ile Gln Ser Val Lys Lys Leu Ala Asp Val Met Val Leu
245 250 255

Thr Val Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe
260 265 270

Met Gly Asn Leu Arg His Lys Cys Val Arg Asn Phe Thr Ala Leu Asn
275 280 285

Gly Thr Asn Gly Ser Val Glu Ala Asp Gly Leu Val Trp Glu Ser Leu
290 295 300

Asp Leu Tyr Leu Ser Asp Pro Glu Asn Tyr Leu Leu Lys Asn Gly Thr
 305 310 315 320
 Ser Asp Val Leu Leu Cys Gly Asn Ser Ser Asp Ala Gly Thr Cys Pro
 325 330 335
 Glu Gly Tyr Arg Cys Leu Lys Ala Gly Glu Asn Pro Asp His Gly Tyr
 340 345 350
 Thr Ser Phe Asp Ser Phe Ala Trp Ala Phe Leu Ala Leu Phe Arg Leu
 355 360 365
 Met Thr Gln Asp Cys Trp Glu Arg Leu Tyr Gln Gln Thr Leu Arg Ser
 370 375 380
 Ala Gly Lys Ile Tyr Met Ile Phe Phe Met Leu Val Ile Phe Leu Gly
 385 390 395 400
 Ser Phe Tyr Leu Val Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr
 405 410 415
 Glu Glu Gln Asn Gln Ala Thr Ile Ala Glu Thr Glu Glu Lys Glu Lys
 420 425 430
 Arg Phe Gln Glu Ala Met Glu Met Leu Lys Lys Glu His Glu Ala Leu
 435 440 445
 Thr Ile Arg Gly Val Asp Thr Val Ser Arg Ser Ser Leu Glu Met Ser
 450 455 460
 Pro Leu Ala Pro Val Asn Ser His Glu Arg Arg Ser Lys Arg Arg Lys
 465 470 475 480
 Arg Met Ser Ser Gly Thr Glu Glu Cys Gly Glu Asp Arg Leu Pro Lys
 485 490 495
 Ser Asp Ser Glu Asp Gly Pro Arg Ala Met Asn His Leu Ser Leu Thr
 500 505 510
 Arg Gly Leu Ser Arg Thr Ser Met Lys Pro Arg Ser Ser Arg Gly Ser
 515 520 525
 Ile Phe Thr Phe Arg Arg Arg Asp Leu Gly Ser Glu Ala Asp Phe Ala
 530 535 540
 Asp Asp Glu Asn Ser Thr Ala Gly Glu Ser Glu Ser His Arg Thr Ser
 545 550 555 560
 Leu Leu Val Pro Trp Pro Leu Arg Arg Thr Ser Ala Gln Gly Gln Pro
 565 570 575
 Ser Pro Gly Thr Ser Ala Pro Gly His Ala Leu His Gly Lys Lys Asn
 580 585 590
 Ser Thr Val Asp Cys Asn Gly Val Val Ser Leu Leu Gly Ala Gly Asp
 595 600 605
 Pro Glu Ala Thr Ser Pro Gly Ser His Ile Leu Arg Pro Val Met Leu
 610 615 620

Glu His Pro Pro Asp Thr Thr Thr Pro Ser Glu Glu Pro Gly Gly Pro
 625 630 635 640
 Gln Met Leu Thr Ser Gln Ala Pro Cys Val Asp Gly Phe Glu Glu Pro
 645 650 655
 Gly Ala Arg Gln Arg Ala Leu Ser Ala Val Ser Val Leu Thr Ser Ala
 660 665 670
 Leu Glu Glu Leu Glu Glu Ser Arg His Lys Cys Pro Pro Cys Trp Asn
 675 680 685
 Arg Leu Ala Gln Arg Tyr Leu Ile Trp Glu Cys Cys Pro Leu Trp Met
 690 695 700
 Ser Ile Lys Gln Gly Val Lys Leu Val Val Met Asp Pro Phe Thr Asp
 705 710 715 720
 Leu Thr Ile Thr Met Cys Ile Val Leu Asn Thr Leu Phe Met Ala Leu
 725 730 735
 Glu His Tyr Asn Met Thr Ser Glu Phe Glu Glu Met Leu Gln Val Gly
 740 745 750
 Asn Leu Val Phe Thr Gly Ile Phe Thr Ala Glu Met Thr Phe Lys Ile
 755 760 765
 Ile Ala Leu Asp Pro Tyr Tyr Tyr Phe Gln Gln Gly Trp Asn Ile Phe
 770 775 780
 Asp Ser Ile Ile Val Ile Leu Ser Leu Met Glu Leu Gly Leu Ser Arg
 785 790 795 800
 Met Ser Asn Leu Ser Val Leu Arg Ser Phe Arg Leu Leu Arg Val Phe
 805 810 815
 Lys Leu Ala Lys Ser Trp Pro Thr Leu Asn Thr Leu Ile Lys Ile Ile
 820 825 830
 Gly Asn Ser Val Gly Ala Leu Gly Asn Leu Thr Leu Val Leu Ala Ile
 835 840 845
 Ile Val Phe Ile Phe Ala Val Val Gly Met Gln Leu Phe Gly Lys Asn
 850 855 860
 Tyr Ser Glu Leu Arg Asp Ser Asp Ser Gly Leu Leu Pro Arg Trp His
 865 870 875 880
 Met Met Asp Phe Phe His Ala Phe Leu Ile Ile Phe Arg Ile Leu Cys
 885 890 895
 Gly Glu Trp Ile Glu Thr Met Trp Asp Cys Met Glu Val Ser Gly Gln
 900 905 910
 Ser Leu Cys Leu Leu Val Phe Leu Leu Val Met Val Ile Gly Asn Leu
 915 920 925
 Val Val Leu Asn Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ala
 930 935 940

Asp 945	Asn	Leu	Thr	Ala	Pro 950	Asp	Glu	Asp	Arg	Glu 955	Met	Asn	Asn	Leu	Gln 960
Leu	Ala	Leu	Ala	Arg 965	Ile	Gln	Arg	Gly	Leu 970	Arg	Phe	Val	Lys	Arg 975	Thr
Thr	Trp	Asp	Phe 980	Cys	Cys	Gly	Leu	Leu 985	Arg	Gln	Arg	Pro	Gln 990	Lys	Pro
Ala	Ala	Leu 995	Ala	Ala	Gln	Gly	Gln 1000	Leu	Pro	Ser	Cys	Ile 1005	Ala	Thr	Pro
Tyr 1010	Ser	Pro	Pro	Pro	Pro	Glu 1015	Thr	Glu	Lys	Val 1020	Pro	Pro	Thr	Arg	Lys
Glu 1025	Thr	Arg	Phe	Glu	Glu 1030	Gly	Glu	Gln	Pro	Gly 1035	Gln	Gly	Thr	Pro	Gly 1040
Asp	Pro	Glu	Pro 1045	Val	Cys	Val	Pro	Ile 1050	Ala	Val	Ala	Glu	Ser	Asp 1055	Thr
Asp	Asp	Gln 1060	Glu	Glu	Asp	Glu	Glu 1065	Asn	Ser	Leu	Gly	Thr 1070	Glu	Glu	Glu
Ser	Ser 1075	Lys	Gln	Glu	Ser	Gln 1080	Pro	Val	Ser	Gly	Gly 1085	Pro	Glu	Ala	Pro
Pro 1090	Asp	Ser	Arg	Thr	Trp	Ser 1095	Gln	Val	Ser	Ala	Thr 1100	Ala	Ser	Ser	Glu
Ala 1105	Glu	Ala	Ser	Ala 1110	Ser	Gln	Ala	Asp	Trp	Arg 1115	Gln	Gln	Trp	Lys	Ala 1120
Glu	Pro	Gln	Ala 1125	Pro	Gly	Cys	Gly	Glu 1130	Thr	Pro	Glu	Asp	Ser	Cys 1135	Ser
Glu	Gly	Ser 1140	Thr	Ala	Asp	Met	Thr	Asn 1145	Thr	Ala	Glu	Leu 1150	Leu	Glu	Gln
Ile 1155	Pro	Asp	Leu	Gly	Gln	Asp	Val 1160	Lys	Asp	Pro	Glu 1165	Asp	Cys	Phe	Thr
Glu 1170	Gly	Cys	Val	Arg	Arg	Cys 1175	Pro	Cys	Cys	Ala 1180	Val	Asp	Thr	Thr	Gln
Ala 1185	Pro	Gly	Lys	Val 1190	Trp	Trp	Arg	Leu	Arg	Lys 1195	Thr	Cys	Tyr	His	Ile 1200
Val	Glu	His 1205	Ser	Trp	Phe	Glu	Thr	Phe 1210	Ile	Ile	Phe	Met	Ile 1215	Leu	Leu
Ser	Ser	Gly 1220	Ala	Leu	Ala	Phe	Glu	Asp 1225	Ile	Tyr	Leu	Glu 1230	Glu	Arg	Lys
Thr 1235	Ile	Lys	Val	Leu	Leu	Glu 1240	Tyr	Ala	Asp	Lys	Met	Phe 1245	Thr	Tyr	Val
Phe 1250	Val	Leu	Glu	Met	Leu	Leu 1255	Lys	Trp	Val	Ala 1260	Tyr	Gly	Phe	Lys	Lys

Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp Val
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Ser Leu Val Ser Leu Val Ala Asn Thr Leu Gly Phe Ala Glu Met Gly
1285 1290 1295
Pro Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg Ala
1300 1305 1310
Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val Gly
1315 1320 1325
Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe Trp
1330 1335 1340
Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe Gly
1345 1350 1355 1360
Arg Cys Ile Asn Gln Thr Glu Gly Asp Leu Pro Leu Asn Tyr Thr Ile
1365 1370 1375
Val Asn Asn Lys Ser Gln Cys Glu Ser Leu Asn Leu Thr Gly Glu Leu
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Tyr Trp Thr Lys Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr
1395 1400 1405
Leu Ala Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met
1410 1415 1420
Tyr Ala Ala Val Asp Ser Arg Gly Tyr Glu Glu Gln Pro Gln Trp Glu
1425 1430 1435 1440
Tyr Asn Leu Tyr Met Tyr Ile Tyr Phe Val Ile Phe Ile Ile Phe Gly
1445 1450 1455
Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe
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Asn Gln Gln Lys Lys Lys Leu Gly Gly Gln Asp Ile Phe Met Thr Glu
1475 1480 1485
Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys
1490 1495 1500
Pro Gln Lys Pro Ile Pro Arg Pro Leu Asn Lys Tyr Gln Gly Phe Ile
1505 1510 1515 1520
Phe Asp Ile Val Thr Lys Gln Ala Phe Asp Val Thr Ile Met Phe Leu
1525 1530 1535
Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Ser
1540 1545 1550
Pro Glu Lys Ile Asn Ile Leu Ala Lys Ile Asn Leu Leu Phe Val Ala
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Ile Phe Thr Gly Glu Cys Ile Val Lys Leu Ala Ala Leu Arg His Tyr
1570 1575 1580

Tyr Phe Thr Asn Ser Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu
 1585 1590 1595 1600
 Ser Ile Val Gly Thr Val Leu Ser Asp Ile Ile Gln Lys Tyr Phe Phe
 1605 1610 1615
 Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile
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 Leu Arg Leu Ile Arg Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala
 1635 1640 1645
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 1650 1655 1660
 Leu Val Met Phe Ile Tyr Ser Ile Phe Gly Met Ala Asn Phe Ala Tyr
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 Val Lys Trp Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Gln Thr Phe
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 Ala Asn Ser Met Leu Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp
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 Pro Thr Leu Pro Asn Ser Asn Gly Ser Arg Gly Asp Cys Gly Ser Pro
 1730 1735 1740
 Ala Val Gly Ile Leu Phe Phe Thr Thr Tyr Ile Ile Ile Ser Phe Leu
 1745 1750 1755 1760
 Ile Val Val Asn Met Tyr Ile Ala Ile Ile Leu Glu Asn Phe Ser Val
 1765 1770 1775
 Ala Thr Glu Glu Ser Thr Glu Pro Leu Ser Glu Asp Asp Phe Asp Met
 1780 1785 1790
 Phe Tyr Glu Ile Trp Glu Lys Phe Asp Pro Glu Ala Thr Gln Phe Ile
 1795 1800 1805
 Glu Tyr Ser Val Leu Ser Asp Phe Ala Asp Ala Leu Ser Glu Pro Leu
 1810 1815 1820
 Arg Ile Ala Lys Pro Asn Gln Ile Ser Leu Ile Asn Met Asp Leu Pro
 1825 1830 1835 1840
 Met Val Ser Gly Asp Arg Ile His Cys Met Asp Ile Leu Phe Ala Phe
 1845 1850 1855
 Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Lys Ile
 1860 1865 1870
 Gln Met Glu Glu Lys Phe Met Ala Ala Asn Pro Ser Lys Ile Ser Tyr
 1875 1880 1885
 Glu Pro Ile Thr Thr Thr Leu Arg Arg Lys His Glu Glu Val Ser Ala
 1890 1895 1900

Met Val Ile Gln Arg Ala Phe Arg Arg His Leu Leu Gln Arg Ser Leu
1905 1910 1915 1920

Lys His Ala Ser Phe Leu Phe Arg Gln Gln Ala Gly Ser Gly Leu Ser
1925 1930 1935

Glu Glu Asp Ala Pro Glu Arg Glu Gly Leu Ile Ala Tyr Val Met Ser
1940 1945 1950

Glu Asn Phe Ser Arg Pro Leu Gly Pro Pro Ser Ser Ser Ser Ile Ser
1955 1960 1965

Ser Thr Ser Phe Pro Pro Ser Tyr Asp Ser Val Thr Arg Ala Thr Ser
1970 1975 1980

Asp Asn Leu Gln Val Arg Gly Ser Asp Tyr Ser His Ser Glu Asp Leu
1985 1990 1995 2000

Ala Asp Phe Pro Pro Ser Pro Asp Arg Asp Arg Glu Ser Ile Val
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<223> Description of Artificial Sequence: primer

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